

REMARKS

The present amendment is submitted in response to the Office Action dated June 29, 2004, which set a three-month period for response, making this amendment due by September 29, 2004.

Claims 1-10 are pending in this application.

In the Office Action, claims 1-6 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,041,648 to Angermaier et al. Claims 7-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Angermaier et al in view of U.S. Patent No. 4,711,237 to Hafner.

The Applicant respectfully disagrees that the patent to Angermaier discloses the features of claim 1. Specifically, nowhere in the Angermaier reference is it disclosed that the check valve is regulated such that during the tank ventilation, a pressure in the fuel tank (1) is adjusted by means of the check valve (10), which at least at a median, is commensurate with a predetermined diagnosis pressure in the fuel tank (1) during the diagnosis for tank leakage.

The Applicant believes an explanation of the structure and function of the present invention and the device of the references is appropriate.

Angermaier relates to a device in which a full or almost full fuel tank 11 is recognized by means of a pressure sensor 15 arranged in a ventilation line 13. When the evaluation of the signal of the pressure sensor 15 has indicated that a full or almost full fuel tank 11 is resent, no tank leak diagnosis takes place, since

in this operating condition, high pressure variations in the fuel tank occur, which make difficult a reliable tank leak diagnosis.

In Angermaier, a tank ventilation assembly is shown, which connects the fuel tank 11 with the intake port 23 via a ventilation line 13, an activated charcoal container 14, and a regeneration line 21. A tank ventilation valve 24 is disposed in the regeneration line. The activated charcoal container 14 has a ventilation line 25, in which a check valve 26 is provided.

According to the method disclosed in the Angermaier reference, the tank leak diagnosis can only begin when previously measured pressure variation ΔDTP lie below a threshold value. When the pressure variation ΔDTP lies below the threshold value, the fuel tank 11 is not filled completely, so that the tank leak diagnosis is enabled. The tank ventilation valve 24 is then closed to the time point t_1 and the check valve until time point t_2 (Fig. 4). Next, the tank ventilation valve 24 is again opened, so that the pressure in the fuel tank 11 drops by means of the negative pressure in the intake manifold 23.

If no predetermined pressure drop $DTPR$ is reached within a specified time, starting from a reference pressure in the fuel tank 11 at time point r_2 , an interruption of the tank leak diagnosis occurs. Otherwise, the tank ventilation valve 24 is again closed and the fuel tank 11 is hermetically sealed against the surrounding environment in this manner. Subsequently, the development of the pressure in the fuel tank 11 is monitored. If a sudden pressure increase occurs in the fuel tank 11, a leak in the tank ventilation assembly must exist.

For tank ventilation, in Angermaier, the check valve 26 and the tank ventilation valve 24 are opened. In this manner, fresh air is drawn in into the activation charcoal container 14 via the ventilation line 25 and the check valve 26. In the activated charcoal container 14, the fresh air absorbs fuel stored in the activated charcoal container 14. The fresh air and the fuel absorbed by the fresh air move via the regeneration line 21 and the tank ventilation line 24 into the intake port 23. In the fuel tank 11, the tank ventilation employs an undetermined negative pressure in this phase. In Angermaier et al, no information is provided about the height of the negative pressure during the tank ventilation. Also, no information is provided on the problem of pressure increase by fuel gas emission during the tank leak diagnosis.

In contrast, with the method of the present invention as defined in claim 1, the negative pressure in the fuel tank 1 during the tank ventilation is regulated, such that during the tank ventilation, a pressure in the fuel tank 1 is employed, which in a median is at least as great as a predetermined diagnosis pressure in the fuel tank 1 during the tank leak diagnosis.

The total pressure increase determined with the tank leak diagnosis is made up of a leak-pressure increase, which actually is caused by the leak, and an exhaust pressure increase, which exists from the exhausting of fuel during the tank leak diagnosis and is not caused by a leak. In order to reliably determine that a leak has occurred in the tank ventilation assembly, the exhaust pressure increase must be calculated from the total pressure increase.

With the state of the art, the markedly pressure-dependent gas emission during the tank ventilation is determined with the same pressure, which also prevails during the tank diagnosis. In this manner, the gas emission is determined at the correct level, so that the actual leak pressure increase can be calculated more exactly and a much more reliable tank leak diagnosis is achieved than that of the Angermaier reference.

Because Angermaier fails to disclose these features of the method of claim 1 of the present invention, the rejection of claim 1 under Section 102 cannot be maintained. For a prior art reference to anticipate a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art. *Motorola, Inc. v. Interdigital Tech. Corp.*, 43 USPQ 2d 481, 1490 (Fed. Cir. 1997). The prior art reference must describe the Applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it. *In re Spada*, 15 USPQ 1d 1655, 1657 (Fed. Cir. 1990).


For the reasons set forth above, the Applicant respectfully submits that claims 1-10 are patentable over the cited art. The Applicant further requests withdrawal of the rejections under 35 U.S.C. 102 and 103.

In light of the foregoing arguments in support of patentability, the Applicant respectfully submits that this application stands in condition for allowance. Action to this end is courteously solicited.

Should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss

appropriate claim language that will place the application into condition for allowance.

Respectfully submitted,



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